

B. REMARKS.

1. Introduction.

This application was taken on appeal from an Office Action mailed on June 5, 2003, in which claims 11-30 were rejected under 35 U.S.C. §102(e) and 103(a) as allegedly being unpatentable over US Patent No. 6,181,743 to Bailleul (the "Bailleul Patent") or US Patent No. 5,912,709 to Takahashi (the "Takahashi Patent"). Applicants do not agree with the rejection, but on appeal, noticed that certain limitations literally present in independent claim 11 were not present in independent claims 21 and 25. The purpose of the accompanying request for continuing examination and this amendment is to add the limitations to these claims such that all of claims 11-30 are predicated upon the use of independently encoded regions.

2. Regarding "Anticipation" And The Bailleul Patent.

Claims 11-12 and 25 were rejected as allegedly anticipated over the Bailleul Patent; claim 25 has herein been amended, but claims 11-12 have not and Applicants wish to comment on the errors in the Examiner's rejection.

As is very well established, rejection under section 102 is proper only if a prior art reference shows each and every element of the claim in question, arranged as in the claim. *Orthokinetics, Inc. V. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1574, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

The Bailleul Patent relates to a system that calls for decoding of an image frame for logo insertion, and discloses two implementations for this purpose (*see, e.g., FIG. 3 of the Bailleul Patent, column 5, lines 44-57, and column 1, line 58 - column 2, line 18*). In the "first implementation," each entire frame is decoded (from the bitstream) from a bitstream into a motion vector and *residual format*. *See, e.g., column 5, lines 18-38 and FIGS. 4-5 of the Bailleul Patent, especially noting in FIG. 5 that the entire input signal, processed through blocks "VLD," "IQ" and "IDCT" are subject to decompression through an IDCT, i.e., an "inverse discrete cosine transform."* The Bailleul Patent then at *column 5, lines 39 et seq. and with reference to its FIG 6*, goes on to discuss a second, "further improved" implementation, where only part of a video frame is processed to add a logo. In this "second implementation," as contrasted with the

"first implementation," it is proposed to no longer add a logo (in the spatial domain) but instead to insert additional data into the video bitstream without modifying other parts of the picture. *See, e.g., column 5, lines 44-51.* This "second implementation" accomplishes a similar result to the present invention, in that unlike the "first implementation" of the Bailleul Patent, the purpose of this "second implementation" is to permit extraction of some compressed data, and insertion of new data to take its place; the "second implementation" of the Bailleul Patent, however, operates in a different manner than the present invention. In this regard, the "second implementation" calls for four steps, including a DC estimation step where the current data is estimated based on the average value of past frames and current average residual value (see, e.g., column 5, line 58-column 6, line 22), a logo processing step where the estimated values are processed to add a logo in a predictive manner (e.g., such that it can be inserted back into the original bitstream, a logo clipping step and a logo addition step (see e.g., columns 6 and 7 of the Bailleul Patent). Otherwise stated, the Bailleul Patent states in effect that its "first implementation" produces better quality, because the "second implementation" must take data estimation steps in order to estimate the value of compressed data ("accurate" data is not available unless one performs full decompression according to the "first implementation"). The Bailleul Patent actually provides evidence of the patentability of Applicants' invention, because it in effect says that "accurate" logo insertion cannot be done without full frame decoding.

The Bailleul Patent clearly differs from all of the pending claims as amended, because it does not show, teach or suggest that select image slices may be decoded without decoding other image slices, and edited in the spatial domain; this result by contrast is achieved in Applicants' invention through Applicants' use of independently coded regions, that are specially constrained so as to be decodable without need of the other, un-decoded image slices. The Bailleul Patent does indicate that its "second implementation" may be used to insert new data together with old data, but in order to do this, it requires special "DC estimation," by which it averages data for prior frames and residuals in order to general an "estimate" of what decoded data should hopefully look like (it does this, because it would need to completely decode the incoming bitstream in order to accurately insert a logo, see, e.g., column 5, lines 47-51). By contrast, the present invention solves this problem by permitting editing, including logo insertion, based on accurate, spatial domain data without need to completely decode the incoming bitstream. The present invention provides decoding of select image slices without requiring either full decoding or data estimation steps, and it does so using independently coded regions.

Because the Bailleul Patent does not literally show the invention of claims 11-12 and 25, arranged as in those claims, any rejection over the Bailleul Patent based on 35 U.S.C. 102(e) is improper and should be withdrawn. Furthermore, the differences between the Bailleul Patent and the present invention, and the fact that the implementations of the Bailleul Patent cannot provide the same results as the present invention without full frame decoding, are such that one would not regard the present invention as obvious over the Bailleul Patent (as will be further discussed below).

3. Regarding "Anticipation" And The Takahashi Patent.

In the Office Action, claims 21 and 24 were rejected as allegedly anticipated by the Takahashi Patent. Reiterating, a rejection under section 102 is proper only if a prior art reference shows each and every element of the claim in question, arranged as in the claim. *Orthokinetics, Inc. V. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1574, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

The Takahashi Patent does not teach decoding data for a region that is a subset of a frame, editing that data, and then combining it with original compressed image data for a particular frame; it does call for re-using original motion vectors from the original compression data, but new picture data is necessarily motion-compensated anew, and thus, the Takahashi Patent does not teach or suggest mixing together original slices and new substitute slices as these terms are used by the present invention.

In this regard, the Takahashi Patent calls for mixing two video signals by decompressing a first frame after an editing point, mixing in the new data, and re-encoding the mixed data. In order to do this without using "a motion detector and a DCT mode judging circuit required for mass calculation in the conventional picture encoder" to re-encode mixed data, the Takahashi Patent calls for essentially saving the original compression information, from the original signal, and re-using the motion vectors from this original signal; for this to happen, the first frame after an editing point is converted to an "I" frame and other dependent frames with the a group of pictures affected by editing are converted as appropriate to depend upon the edited I-frame. With motion vectors already chosen, the mixed data can be inserted as replacement frames back into the original compressed video stream. The Takahashi Patent, however, does not call for extracting a "subset" of image slices for a video frame without decoding the entire frame - rather, for editing to occur, Takahashi decodes the entire frame but saves motion vector information

which it uses to encode edited data without a new motion search. *See, e.g., column 3, lines 57-67 and column 4, lines 1-28 of the Takahashi Patent.* [This operation potentially results in very poor compression, e.g., substantial residuals created by mixing, but a primary objective of the Takahashi Patent is image mixing without the device "size" required by an encoder, *see, e.g., 24-29.* Notably also, re-use of original slice data is entirely inconsistent with frame conversion, i.e., the slice data would necessarily change for the entirety of each converted frame.] A fairly succinct explanation of the process required by the Takahashi Patent is described at *columns 8 and 9* of that patent, with reference to its fourth embodiment.

In rejecting claims over the Takahashi Patent, the Examiner has apparently focused on statements in the Takahashi Patent (e.g., the statement *column 3, lines 49-54*) to the effect that "a part of" other frames may be predicatively encoded using original motion vector data - the Examiner apparently infers that therefore the Takahashi Patent calls for select extraction of a subset of image slices for a frame, editing, and remixing of both edited and non-edited image slices for a frame, but any such inference would be error. The Takahashi patent speaks of mixing "part of" pictures only at column 10, lines 41-50, with reference to its "sixth embodiment" (and associated FIGS. 12-14); in this description and in the drawings description, the Takahashi Patent indicates that multiplexed picture data "A" may be mixed with multiplexed picture data "B" - there is no disclosure, inference, suggestion or other statement by the Takahashi Patent that speaks of mixing extracted and edited slice data representing one part of a picture, with unedited data representing a second part of a picture. Indeed, as mentioned above, the Takahashi Patent still requires conversion of a frame after an editing point to an I-frame, and conversion of subsequent frames to I or P frames as appropriate, with only original motion vectors being re-used; as stated, the original, un-decoded data from the original picture data could not be used because such would be completely inconsistent with frame conversion, and moreover, there is no discussion apparent from the Takahashi Patent specifically how mixed frame editing is accomplished in this sixth embodiment - presumably, processing is identical to the other five embodiments, e.g., with original motion vectors used to eliminate the need for motion search, but without using the original compressed image data or slice data (i.e., with new compressed image data being calculated using original motion vectors to reduce search time.

Again, anticipation requires that a single prior art reference show each and every limitation of a rejected claim, arranged as within the rejected claim. In this regard, the Takahashi does not show selectively extracting and decoding a subset of image slices or a subset of a picture

(notably, FIGS. 12-14 of the Takahashi Patent clearly show decoding of each and every entire picture frame). The Takahashi Patent also does not show use of independently coded regions that permit editing of only a portion of a frame without decoding other portions of the same frame, and the ability to remix edited data back with the original un-decoded data. The differences between Applicants' claimed invention and the Takahashi Patent are substantial, and it is respectfully suggested that the rejection of claims over the Takahashi Patent should be withdrawn, because the Takahashi Patent does not show "each and every limitation" of any of Applicants' claims, and because the teachings of the Takahashi Patent cannot be used to produce the results of the present invention (editing without required decoding the entirety of image frames).

4. Regarding Rejections Based On "Obviousness."

A rejection for obviousness is based on the underlying factual inquiries set forth in *Graham v. John Deere*: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) objective evidence of secondary considerations. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve*, 796 F.2d 443, 447 (Fed. Cir. 1986). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). The appropriate inquiry is *not* whether it would have been obvious to substitute an element, or modify the prior art, in a manner advanced by the Examiner, because that is not the appropriate test of patentability. *See, e.g., In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). Rather, to meet its burden of showing *prima facie* obviousness, the PTO must necessarily show some objective teaching that would lead one of ordinary skill to combine the relevant teachings to solve the problem confronting the applicant. *In re Fine, supra*.

In this case, claims 13-20 and 26-30 were rejected under Section 103(a) over one of the Bailleul or the Takahashi Patents. The Examiner's rejection of these claims were premised on an assumption that the 102(e) rejections (of the underlying claims) were appropriate, and so, the Examiner's rejection of claims 13-20 and 26-30 is simply focused on the "additional features" mentioned in these claims.

Applicants believe the rejection under 35 U.S.C. §103(a) is improper and must be withdrawn for the following reasons.

First, the Examiner's approach was improper - one may not premise unpatentability as the Examiner did only on the "added elements" of a dependent claim in isolation and then try to show that these elements (independent from any base claims) may be found elsewhere in the art - this principle is hornbook law, i.e., an obviousness analysis of dependent claims includes each and every limitation of the dependent claims (including all limitations of each and every independent claim). Because the Examiner's obviousness attack on these claims is legally flawed and in error, the Examiner has failed to make a *prima facie* case against these claims.

Second, as explained above, the rejection under Section 102(e) is improper whether based on the Bailleul or the Takahashi Patents (and thus, the Examiner has not established a *prima facie* case of unpatentability based on obviousness, because if the independent claims are patentable over art, then the dependent claims must also be necessarily patentable over the art).

Third, and most importantly, there are very substantial differences between both of the Bailleul and Takahashi Patents and the present invention - neither reference deals with independently coded regions, such that select image slices may be decoded and edited without decoding data for other image slices. As mentioned above with respect to the Bailleul Patent, without complete image decoding, it would be necessary to employ less accurate, lower quality image estimation steps (because of needed data in the unencoded slices). [Again, it is noted that by expressing this teaching, the Bailleul Patent actually provides evidence of patentability of the present invention.] Neither cited reference teaches or suggests a solution whereby select images may be extracted and decoded from the bitstream using information, for example, region maps, to identify a subset of image slices for a frame that permit complete spatial domain reconstruction without needing data from the other image slices for the frame that are not part of the subset. Applicants believe these differences are so substantial that there is no justification for rejecting Applicants' claims based on Section 103(a) - again, the Bailleul Patent indicates that another approach based on estimation is the only possible alternative short of complete image decoding (*see, e.g., the Bailleul Patent, column 5, lines 44-5*).

Finally, Applicants emphasize with particular regard to claims 16, 20 and 27-28 that these claims further relate to use of a region map identifying slice mapping inserted within the frame header of a compressed video bitstream; in the rejection, the Examiner asserted obviousness without any support *whatsoever*, i.e., the Examiner doesn't even point to any use of this feature in the prior art, and Applicants assert that this evidentiary failure amounts to a failure to

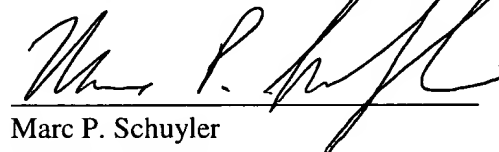
demonstrate a *prima facie* case *per se*. [It should be noted here that the Examiner's statements are not themselves evidence, and to the extent the Examiner is asserting that the use of region maps are well known art, Applicants respectfully invoke MPEP §2144.03 and require the Examiner to demonstrate region maps in the art, or to withdraw the rejection for these claims.]¹ Even if the rejection of the other claims were proper (which is not the case), the final rejection would fail to set forth a *prima facie* case against these claims (16, 20 and 27-28).

Applicants therefore respectfully request withdrawal of the rejection based on 35 U.S.C. §103(a).

5. Conclusion.

It is respectfully submitted that the invention as claimed is patentable over the art relied upon by the Examiner, and that the present case is in condition for allowance.

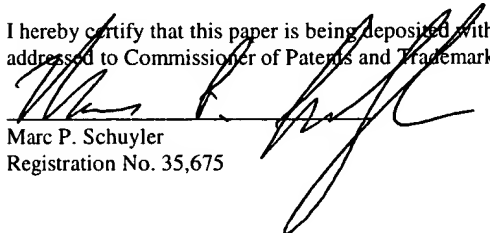
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¹ As stated by M.P.E.P. §2144.03, "if the applicant traverses such an assertion the examiner should cite a reference in support of his or her position." Applicant traverses the assertion at issue and calls upon the Examiner to furnish documentary proof of his assertion or else withdraw his contention.